

ABSTRACT

A new method and structure is provided for the creation of a copper dual damascene interconnect. A dual damascene structure is created in the layer of dielectric, optionally a metal barrier layer is deposited over exposed surfaces of the dual damascene structure. A copper seed layer is deposited, the dual damascene structure is filled with copper. An anneal is applied to the created copper interconnect after which excess copper is removed from the dielectric. Of critical importance to the invention, a thin layer of oxide is then deposited as a cap layer over the copper dual damascene interconnect, an etch stop layer is then deposited over the thin layer of oxide for continued upper-level metallization.